

REMARKS

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe the subject matter which applicant regards as the invention.

Initially, the Examiner determined that claims within the previously elected group further contain two patentably distinct species, and required applicant to elect a single species for prosecution on the merits. The species identified by the Examiner are:

Species A: Claim 1; and

Species B: Claims 5, 6, 8.

During a telephone conversation on November 10, 2008, applicant provisionally elected, without traverse, Group I, claim 1, for prosecution on the merits. The provisional election is hereby affirmed. Claims 5, 6, and 8 have been cancelled.

As a provisional election was made, the Examiner was able to reach the merits of the elected claim. Claim 1 was rejected under 35 U.S.C. 102(e) as being anticipated by JP 08-259767 to Itou et al. (hereinafter, "Itou"). The rejection is traversed for the following reasons.

The undersigned would like to thank the Examiner for taking time to discuss the present Office action during a telephone conversation on December 19, 2008. The conversation was helpful in preparing the present response and is referenced below.

It is preliminarily asserted that the rejection of claim 1 under 35 U.S.C. 102(e) based on a Japanese application is improper. It is believed that the Examiner intended to make this a rejection under 35 U.S.C. 102(b), and it will be treated as such hereinafter.

It is respectfully submitted that Itou fails to anticipate the invention defined by claim 1. The invention defined by claim 1 is directed to a method for manufacturing a fuel cell separator. The method includes a step of obtaining a mixture by mixing a thermoplastic resin and a conductive material. The thermoplastic resin is selected from the group consisting of: ethylene / vinyl acetate copolymers, ethylene / ethyl acrylate copolymers, straight-chain low-density polyethylene, polyphenylene sulfide and modified polyphenylene oxide. The conductive material includes carbon particles selected from the group consisting of: black lead, Ketchen black, and acetylene black. The mixture is then formed into a separator starting material having gas flow passage grooves in a contact face. The contact face of the separator starting material is then irradiated with an electron beam.

Itou teaches a conductive plastic plate for use with a battery. It is preliminarily noted that while batteries and fuel cells are similar in many respects, there are differences. Both catalyze a reaction between two chemicals to produce electricity. a fuel cell does so by contacting two reactive fuel gases together (hydrogen and oxygen). The reactive fuel gases are constantly being supplied as a gas to the fuel cell and contacted together in the separator. In contrast thereto, a battery contains all of the chemicals it needs to produce electricity (the chemicals are not supplied from the outside). The chemical reaction in a battery occurs through the transport of a liquid electrolysis solution through the separator. It is considered noteworthy that

batteries operate via the transport of a liquid, as opposed to a gas (as in a fuel cell).

The plate of Itou contains a polymer that is mixed with a carbon black. Itou discloses that the polymer can be an ethylene-vinyl acetate copolymer, an ethylene-ethyl acrylate copolymer, or a thermoplastic polyolefin elastomer. The carbon black in Itou can be a Ketchen black, which is a particular brand of carbon black. Once mixed and formed, the plate of Itou is irradiated using an electron beam bridge construction.

However, Itou fails to teach forming a separator starting material having gas flow passage grooves in a contact face. With reference to MPEP 2131, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference". Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631 (Fed. Cir. 1987). Further, the "identical invention must be shown in as complete detail as is contained in the ... claim". Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236 (Fed. Cir. 1989).

The only disclosures found within Itou that could, in any way, be interpreted to be relevant to the gas flow passage grooves are found in Fig. 2 and paragraph [0006] of the translation of Itou. Fig. 2 shows what is described as a "stack structure" in paragraph [0005] of the translation. However, given the rough nature of the translation, the sub-elements of the figure are not explicitly referenced or denoted using Arabic numerals. As such, to understand the structure of the plastic plate of Itou, much of the teachings of Itou must be distilled from context rather than taken from an express disclosure. In this regard, it is noted that when reviewing the level of disclosure required within a reference, there is no basis in the statute (35 U.S.C. 102 or 103) for discriminating either in favor of or against prior art references

on the basis of nationality. In re Moreton, 288 F.2d 708 (CCPA 1961). This rule is considered to mean that the benefit of the doubt cannot be assigned to a poorly translated or rough foreign reference. Rather, as with a U.S. patent or application, the reference must fully disclose the invention in order to anticipate the claim. Thus, the Examiner cannot give Itou the benefit of the doubt in regards to an undisclosed feature based solely on the present copy of Itou being a rough translation.

Turning to the disclosure of Itou, the Examiner looks to the recitation of "manifolds" in paragraph [0006] as teaching the gas flow passage grooves of claim 1. However, closer reference to paragraph [0006] shows that Itou is disclosing "four manifolds formed in the same position of each plate". With reference to Fig. 2, it is clear that the only items that could be interpreted to be "four manifolds formed in the same position of each plate" are the two holes formed at the top of each plate and the two holes formed at the bottom of each plate. Therefore, the only elements of Fig. 2 that could be interpreted to be the manifolds are said holes.

It is asserted that the recitation of (what appears to be) a set of rounded holes does not teach gas flow passage grooves formed in a face of the plate. Rather, the holes are provided to transport liquid through the plates. In this regard, it is noted that the manifolds are not described or intended for gas transfer, and are therefore not gas passages.

Accordingly, to find that forming a separator starting material having gas flow passage grooves formed in a contact face is taught by Itou, the disclosure must come from somewhere other than paragraph [0006]. A review of the remainder of the specification reveals that Itou is completely silent as to any written disclosure of gas flow passage grooves formed in a face of the plastic plate. Further, there is no

depiction in Fig. 2 that could reasonably be interpreted to teach gas flow passage grooves. The lack of a disclosure of gas flow passages in Itou is consistent with the operation of a battery (liquid transport, as discussed above) in contrast to the operation of a fuel cell (gas transport).

In the above-referenced conversation with the Examiner, the Examiner's stated position was that, given her familiarity with the art, she knows that the gas flow passage grooves are present. While the Examiner's expertise is appreciated, a proper anticipation rejection requires the teaching be present in the cited art itself. A reliance on the personal knowledge of the Examiner would require the Examiner to follow the procedures explained in MPEP 2144.03 and take Official Notice of the fact. Applicant believes that taking official notice of this particular feature would be improper under the rules.

Thus, Itou fails to teach a method for manufacturing a fuel cell separator from a mixture that includes "forming with the mixture a separator starting material having gas flow passage grooves in a contact face of thereof", as required by claim 1. Insofar as claim 1 recites a method step that is not taught by Itou, Itou fails to anticipate claim 1. Withdrawal of the rejection of claim 1 based on Itou is requested.

Further, claims 9 – 12 have been added for consideration in the present application. Claim 9 is an independent claim that defines a method for manufacturing a fuel cell separator similar to that of claim 1. However, claim 9 limits the thermoplastic resin group to one of polyphenylene sulfide and modified polyphenylene oxide, which are not taught by the Itou reference. As the thermoplastic resins defined in claim 9 are not taught by Itou, claim 9 is considered allowable over the art.

Claim 10 is an independent claim that defines a method for manufacturing a fuel cell separator similar to that of claim 1. Claim 10 limits the carbon particles group to black lead. Itou does not teach the use of black lead as a potential carbon particle. As such, Itou fails to teach each and every feature of claim 10. Claim 10 is therefore considered to be allowable over the art.

Claim 11 depends from claim 9 and defines the conductive material as black lead. Itou fails to disclose the use of the thermoplastic resins (defined in claim 9) and black lead. Accordingly, claim 11 is considered to be allowable over the art.

Claim 12 depends from claim 1 and defines the irradiation using an electron beam such that the electron beam irradiation is performed with respect to only the contact face of the separator starting material. By applying the electron beams only to the contact face having the gas flow passage grooves, the contact face becomes hardened to a certain degree and is provided with a 3-dimensional bridge structure while parts of the separator starting material other than the contact face maintain synthetic resin elasticity. Accordingly, the seal between the contact face and the diffusion layer is improved. Further, by hardening the contact face, the sealing state can be maintained even when the contact face becomes softened by fuel cell reaction heat.

In contrast to the inventive method defined in claim 12, Itou fails to teach or suggest a method wherein only the contact face of a separator starting material is hardened to a certain degree while the other parts of the separator starting material maintain synthetic resin elasticity. Accordingly, claim 12 recites features that are not taught or suggested by the cited art. Thus, notwithstanding the patentability of claim 1, claim 12 is considered to be independently allowable over the art.

All of the new claims recite features that are not taught or suggested by the Itou reference, and are therefore considered to be allowable over the art. Favorable consideration of the new claims is requested.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 18-0160, our Order No. SHM-15810.

Respectfully submitted,

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